

ACTION SHEET 4

Equipment for Fast Critical Assembly (FCA) Facility

Pursuant to the DOE/JAERI Agreement on R&D in Material Control, Accountancy, Verification, Authentication, and Physical Protection.

A. Objective

DOE and JAERI undertake to carry out a cooperative effort on development of authentication equipment for use at the Portal Monitor (P/M) and Penetration Monitor (PN/M) of the FCA facility.

B. Current Activities

1. DOE activities relevant to authentication technology.

Sandia National Laboratories (SNL) has performed authentication work which includes the following current activities:

- Development and installation of authentication equipment for advanced containment and surveillance systems, including video authentication and signal line authentication.
- Development and commercialization of the Modular Integrated Video System (MIVS).
- Development of the Authenticated Item Monitoring System (AIMS).

2. JAERI Activities

JAERI has developed the Portal/Penetration Monitor system for use by the IAEA and STA at the FCA.

C. Cooperative Activities

Authentication options, equipment specifications and design have been completed under the U.S. Program of Technical Assistance to IAEA Safeguards (POTAS). Future bilateral activities are anticipated to follow the attached provisional schedule and will include exchanges of the information and the equipment as follows:

1. SNL is to design, fabricate, and deliver the Authentication Controllers which will provide an independent and reliable means of authenticating the P/M and PN/M including authentication of monitor functions and automatic comparison of data at the FCA facility. Design will be in accordance with the following documents:

Specification of Authentication Equipment for the FCA Portal Monitor (P/M) System (Rev.2), 90-01-29

Specification of Authentication Equipment for the FCA Penetration Monitor (PN/M) System (Rev. 1), 90-01-29

2. JAERI is to install the system at FCA with assistance from the IAEA/STA and SNL.
3. SNL is to verify proper installation of the system and to make available training to the IAEA/STA personnel who will be using the system.
4. A three month evaluation of the authentication equipment will be carried out by the IAEA/STA and supported by SNL and JAERI.
5. JAERI shall provide DOE with funding to carry out the work at SNL. The amount of the payment shall be 270,000 in U.S. dollars. Payment shall be made in the following manner:

A contribution of 270,000 in U.S. dollars shall be due and payable upon receipt of an invoice to be issued upon or shortly after the date of approval by the PCG of this action sheet.

Approvals:

Keisuke Kuroki 何山
JAERI PCG Member

Keiji Hiasa
JAERI PCG Member

On Kenneth Sanchez
DOE PCG Member

DOE PCG Member

16 November 1990
Date

Provisional Schedule of Activities

	<u>Activity</u>	<u>Responsibility</u>	<u>Schedule/Status</u>
1.*	Make any necessary design changes resulting from design review	SNL	March 1991
2.	Test custom designed components	IAEA/STA/SNL	March 1991
3.	Fabricate and assemble authentication controller components	SNL	April 1991
4.	Conduct pre-installation tests at FCA facility	SNL/JAERI	April 1991
5.*	Complete development of P/M, PN/M controllers and IAEA PC interface	SNL	June 1991
6.	Perform system tests	SNL	July 1991
7.*	Modify equipment as necessary based on test results	SNL	TBD
8.	Complete development of comparator	SNL	July 1991
9.	Install and field test prototype at FCA	IAEA/STA/SNL/JAERI	Aug.-Oct. 1991
10.*	Assess results and modify equipment if necessary	IAEA/STA/SNL	TBD
11.	Complete training course	IAEA/STA/SNL	October 1991
12.	Finalize documentation	IAEA/STA/SNL	October 1991

* Note: Above schedule is contingent on no major changes at activities 1, 7, and 10. Activity 5 is dependent on proper performance of support equipment. Cost for this effort is also contingent on no major changes.

LIST OF PCG COORDINATORS AND PROJECT LEADERS

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